

GTC East - September, 2007



Defining Business Requirements



Agenda

9:00 a.m.

- ◆ Introduction
- ◆ Staging for Success
- ◆ Productive Meetings
- ◆ Writing Requirements
- ◆ Lab #1

10:15-10:30 a.m. *Break*

- ◆ Analyzing Requirements
- ◆ Lab #2
- ◆ Overcoming Obstacles

11:45-12:45 p.m. *LUNCH*

- ◆ Illustrating Business Processes
- ◆ Questions You Should Always Ask
- ◆ Lab #3
- ◆ Business Requirements Template Example
- ◆ Gap Analysis
- ◆ Lab #4

2:45-3:00 p.m. *Break*

- ◆ Tracing changes to requirements
- ◆ Lab #5
- ◆ Wrap Up

Introduction

Mandy Herrington, Executive Consultant, CGI

- ◆ 20 years of experience in the IT industry, over 15 of those years working with state government agencies.
- ◆ Full application development lifecycle, from determining the initial requirements, through design, development, testing, implementation, training and maintenance support.
- ◆ Experienced project manager, leading requirements meetings, JAD Sessions, prototype reviews, and user acceptance follow-up.
- ◆ Quality Assurance lead and certified Internal Quality System Auditor within CGI.

Forces of Change

- ◆ User Feedback / Requests
- ◆ Technology / Equipment Aging Out
- ◆ New Regulations
- ◆ New Leadership
- ◆ Available Funding

Methods, Documentation and Tools

Methods and Documentation

- ◆ UML (Unified Modeling Language)
- ◆ Extreme Programming (XP)
- ◆ Agile
- ◆ Use Cases
- ◆ Workflow Diagrams
- ◆ Activity Diagrams
- ◆ Entity Relationship Diagrams
- ◆ Sequence Diagrams

Tools

- ◆ Blueprint Requirements Center
- ◆ Borland Caliber
- ◆ HP Mercury Quality Center
- ◆ IBM Rational Suite
- ◆ Microsoft Visio
- ◆ Microsoft Visual Studio
- ◆ Oracle Designer

Methods, Documentation and Tools

Methods and Documentation

- ◆ UML (Unified Modeling Language)
- ◆ Extreme Programming (XP)

Tools

- ◆ Blueprint Requirements Center
- ◆ Borland Caliber

All of these start with the premise that the requirements are understood and agreed upon.

- ◆ Activity Diagrams
- ◆ Entity Relationship Diagrams
- ◆ Sequence Diagrams
- ◆ Microsoft Visual Studio
- ◆ Oracle Designer

Why Not Let the Tools Do the Job?

*“If you don’t know where you are going,
you will wind up somewhere else.”*

— *Yogi Berra*

Staging for Success

What Should Be Known Before the First Meeting?

- ◆ Does the organization have existing written standards for the following:
 - ◆ GUI (Graphical User Interface)?
 - ◆ Report format and layout?
 - ◆ Database Design?
 - ◆ Security and Privacy?
- ◆ Are these standards maintained and enforced?
- ◆ If so, who is responsible for the standards reviews?

Staging for Success (cont.)

Who Should Be Involved in Requirements Gathering?

- ◆ Managers and End Users
- ◆ Business Owners
- ◆ Subject Matter Experts
- ◆ Central and Field office staff, if applicable
- ◆ External Users, if applicable and possible
- ◆ IT Staff

Staging for Success (cont.)

What Else Should Be Known Before the First Meeting?

- ◆ Are the current processes documented?
- ◆ If not, are you expected to document what is currently done or what the future process should be? Or both?
- ◆ Has the scope of the project been defined clearly?
- ◆ Is there a schedule and budget to adhere to?

Staging for Success (cont.)

What is the Technical Environment?

- ◆ Has the organization identified and procured the tools to be used on the project?

For example:

- ◆ Application Development Language(s)
- ◆ Database Design and Development
- ◆ Report Development
- ◆ Website Content Management, if applicable
- ◆ Document Management, if applicable
- ◆ Testing

Staging for Success (cont.)

Importance of a Project Executive Committee on Large Projects

- ◆ Small group, no more than 5 individuals
- ◆ Project Champions
- ◆ Available if issues arise that must be escalated
- ◆ High positions within the organization
- ◆ Access to Policy Office and General Counsel, if needed
- ◆ One in the group with responsibility and authority to make decisions when/if there is a stalemate

Productive Meetings - Before

- ◆ If anything is already known, distribute a draft list of requirements one week prior to the scheduled meeting.
- ◆ If an RFP exists, start with validating those requirements.
- ◆ If it is a small project, schedule a one-on-one meeting.

Productive Meetings - Before

- ◆ Who Should Attend?
 - ◆ Facilitator Analyst (this person must be a neutral party)
 - ◆ End User(s)
 - ◆ “Business Owner” Representative (Central Office and Constituents)
 - ◆ IT Representative
 - ◆ Scribe dedicated to note-taking
 - ◆ Ideally no more than 5-7 people participating

Productive Meetings – Before (cont.)

- ◆ Establish ground rules at the start
 - ◆ Meetings start on time
 - ◆ Focus is on the agenda
 - ◆ One person at a time
 - ◆ 5-minute rule
 - ◆ Issues discussed offline (“Parking Lot”)

Productive Meetings - During

Getting Started

- ◆ Go around the room making introductions, including a brief description of job responsibilities.
- ◆ Review the Ground Rules.

Set Expectations

- ◆ We are here to learn about your business, OR
- ◆ We are here to confirm your original requirements.
- ◆ We are not designing the solution today.

Productive Meetings - During (cont.)

- ◆ Ask them to describe their flow of work as if you are a new employee.
- ◆ Ask “Why?” and “Who is responsible?” at each step.
- ◆ Verify and Reinforce
 - ◆ Summarize the understanding with the group before moving on to the next step or topic.
 - ◆ If an answer seems thin or incomplete, rephrase the question and try again.
 - ◆ Limit war stories, as politely as possible.

Business Requirements vs. Business Rules

- ◆ “Business Rule” is a term that is widely applied and means different things to different people. It is sometimes used interchangeably with “Business Requirement”.
- ◆ For this seminar, Business Requirements are the overall expectations of the system from the business perspective.
- ◆ Examples of business requirements would be:
 - ◆ Create, retrieve, update and delete records of information;
 - ◆ Generate reports off of the information collected; and
 - ◆ Secure the modifying and/or viewing of data based on the security role of the logged in user.

Business Requirements vs. Business Rules (cont.)

- ◆ Business Rules, in contrast, are more precise, and generally fall under business requirements.
- ◆ Examples of business rules would be:
 - ◆ The To Date in a date range cannot be earlier than the From Date of the same date range.
 - ◆ The Assessment Date cannot be earlier than the Admission Date, unless the assessment came from a referral.

Business Requirements vs. Business Rules (cont.)

- ◆ It is a matter of scale and precision.
- ◆ A business requirement (or set of requirements) will evolve into the development of a screen, report, or whole module composed of multiple screens.
- ◆ A business rule will translate into specific code that validates data entered or enforces desired behavior from the user.

Productive Meetings - During (cont.)

- ◆ Business Rules
 - ◆ Users won't always know what you mean by "business rules"
 - ◆ Guide them to the rules by asking "curiosity" questions.
- ◆ Exceptions
 - ◆ Once some rules have been revealed, ask if they ever can be overridden?
 - ◆ Is the system expected to enforce the rule, or just warn the user when it is violated?

Productive Meetings - Conclusion

“I wish I had an answer to that, because I am tired of answering that question.”

– Yogi Berra

Writing Requirements - Overview

- ◆ Follow-up meetings in writing
- ◆ Summarize findings
- ◆ Illustrate the business flow
- ◆ Formally request the participants review and feedback
- ◆ Make revisions, meeting again if needed, and resubmit
- ◆ **GET APPROVAL!**

Writing Requirements - Techniques

- ◆ Describe requirements as discrete statements.
- ◆ Use unambiguous, specific language.
- ◆ Avoid open-ended words or overly general phrasing (e.g., “some”, “any”, “most”, “usually”, “etc.”).
- ◆ Constantly ask yourself,
 - ◆ “Can I measure the fulfillment of this requirement?”
 - ◆ “How will I test that the requirement has been satisfied?”

EXAMPLE – Requirement Wording

- ◆ You receive an e-mail containing the following request for a new report:
 - ◆ “The new Management report must show all of the information collected for all sites within a given timeframe. The user should be able to see the report for a monthly, quarterly or yearly time interval. If no data exists for a particular site in the time period, still show the site with all zeros. Sites should not see any other site’s data.”

Lab Exercise #1

- ◆ New Report Requested
 - ◆ Answer the questions in the Lab workbook
 - ◆ Refer back to the slides on “Writing Requirements” for guidance.
 - ◆ We will discuss as a group.

Lab Exercise #1 - DISCUSSION

- ◆ “The new Management report must show **all** of the information collected for **all sites** within a given timeframe. The user should be able to see the report for a monthly, quarterly or yearly time interval. If no data exists for a particular site in the time period, still show the site **with all zeros**. Sites should not see any other site’s data.”

**Is this a restriction?
Limit the user to
these 3 options?**

**What defines a “site”?
Who can / cannot see
this report?**

Writing Requirements – Analysis

- ◆ Analyze the wording of the requirements
 - ◆ **Nouns** can indicate:
 - ◆ Data
 - ◆ Screens or Reports
 - ◆ Users / Actors
 - ◆ Other Systems
 - ◆ **Verbs** can indicate:
 - ◆ Functionality
 - ◆ Workflow
 - ◆ **Adjectives** can indicate:
 - ◆ Business Rules

Writing Requirements – Analysis (cont.)

- ◆ “The new Management report must show all of the information collected for all sites within a given timeframe. The user should be able to see the report for a monthly, quarterly or yearly time interval. If no data exists for a particular site in the time period, still show the site with all zeros. Sites should not see any other site’s data.”

- ◆ Nouns

- ◆ Verbs

- ◆ Adjectives

Lab Exercise #2

- ◆ Automating a Manual Process
 - ◆ Answer the questions in the Lab workbook
 - ◆ Refer back to the slides on “Writing Requirements” for guidance.
 - ◆ We will discuss as a group.

Lab Exercise #2 - DISCUSSION

Obstacles to Good Requirements

- ◆ Availability of knowledgeable resources
- ◆ Entrenched habits and traditions
- ◆ Skepticism / Past Failures
- ◆ Fear

Overcoming Obstacles - Lack of Resources

Challenge: Knowledgeable staff have been lost to retirement incentives and attrition

- ◆ Focus on the forms, reports and other documents that are produced.
- ◆ Who completes, receives and uses these materials?
- ◆ Develop a general business flow, based on the information gathered from the available documents.
- ◆ May provide an opportunity to shed inefficiencies.

Overcoming Obstacles – Habits

“Curious things, habits. People themselves never knew they had them.”

– Agatha Christie

Overcoming Obstacles – Habits (cont.)

- ◆ With curiosity, not criticism, ask “Why?”
- ◆ Be respectful of their knowledge and experience
- ◆ Remember that you are there to learn from their expertise
- ◆ Patience on the part of the facilitator can lead the users to talk themselves out of obsolete habits
- ◆ This is the ideal positive, forwarding-thinking, outcome

Overcoming Obstacles – Skepticism

- ◆ Acknowledge and be respectful of concerns. They are participating because of their expert knowledge in the business, including knowing where the pitfalls were before.
- ◆ Ignore the negativity of the tone; focus on the content of the message.
- ◆ If you have a good understanding of the reasons why past attempts failed, state why this time is different.
- ◆ Skeptics are sometimes disappointed enthusiasts.

Overcoming Obstacles – F E A R

Types of Fear

- ◆ Fear of failure
- ◆ Fear of embarrassment/exposure
- ◆ Fear of making the wrong choice
- ◆ Fear of losing job
- ◆ FEAR OF CHANGE

Overcoming Obstacles – F E A R (cont.)

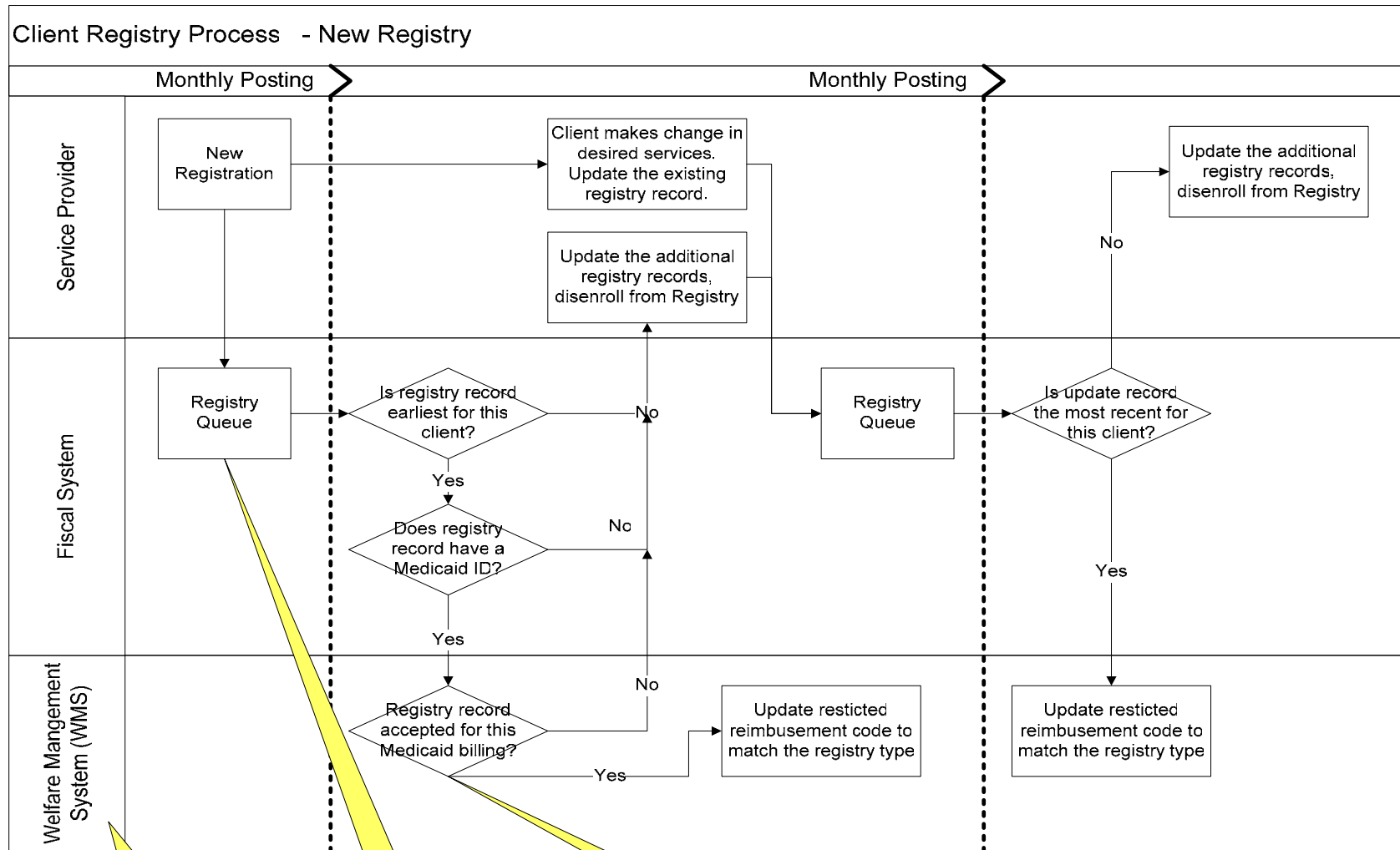
Counteracting Fear

- ◆ Participation in the process mitigates fear
- ◆ As requirements evolve into design, the focus of the group gradually shifts from looking back to looking ahead
- ◆ Involvement breeds comfort, familiarity, and enthusiasm.

Illustrating Business Processes

- ◆ Business Process Flow is illustrated as steps that:
 - ◆ Process incoming information;
 - ◆ May have decision points, and;
 - ◆ Have some sort of result.
- ◆ Cross-Functional Diagram
 - ◆ Illustrates the workflow and/or movement of information between different groups within and outside of an organization

Illustrating Business Processes - Example



Business Unit or Group assigned to a "Swim Lane"

Specific Process or Workflow Step

Decision Step in the Workflow

Questions You Should Always Ask

- ◆ What are the sources of the information collected by this step or process?
- ◆ Is any part of this step currently automated?
 - ◆ If so, will this new system replace the current automation?
 - ◆ If so, will that data need to be migrated into the new system?
- ◆ Do any other systems currently use the results of this step or process?

Questions You Should Always Ask (cont.)

- ◆ Will the new system use information supplied by another system?
- ◆ Are there existing reports that must be available in the new system?
- ◆ Who uses the information collected by these processes?
- ◆ Will you be responsible for preparing user manuals, on-line help, and/or training materials for the new system?

Lab Exercise #3

- ◆ Comparing Business Requirements to the Business Flow
 - ◆ Answer the questions in the Lab workbook
 - ◆ Refer back to the slides on “Writing Requirements” and “Illustrating Business Flow” for guidance
 - ◆ We will discuss as a group

Lab Exercise #3 - DISCUSSION

Business Requirements Template

- ◆ Document Control
- ◆ Introduction
 1. General Requirements
 2. Reporting Requirements
 3. Security Requirements
 4. Questions
- ◆ Appendix A: Process Flow Diagram
- ◆ Appendix B: Preliminary List of Data Items

Gap Analysis

- ◆ Perform a Gap Analysis when:
 - ◆ An existing system is being replaced with something new
 - ◆ New functionality is being introduced
 - ◆ A new report is requested
 - ◆ Data from another source is to be imported into a system

Lab Exercise #4

- ◆ Distributed Databases to be Centralized
 - ◆ Answer the questions in the Lab workbook
 - ◆ We will discuss as a group

Lab Exercise #4 - DISCUSSION

Requirements Traceability

- ◆ Change is inevitable
- ◆ Early discovery is easier to accommodate
- ◆ Tools can help manage changes and assist in measuring the impact of the change
- ◆ Even for internal projects, changes should be documented and approved through a change control process
- ◆ Accommodating one person's request may have a negative impact on another user or group

Requirements Traceability (cont.)

- ◆ Change request should include:
 - ◆ Who requested
 - ◆ Date requested
 - ◆ Description of the requested change
 - ◆ Impact of the requested change:
 - ◆ Screen?
 - ◆ Database?
 - ◆ Business rules?
 - ◆ Test plans?
 - ◆ What documentation will need to be updated?
 - ◆ Change request decision
 - ◆ Approved, including sign-off / approval to proceed
 - ◆ Rejected, including reason

Lab Exercise #5

- ◆ Tracing impact of change to a requirement
 - ◆ Answer the questions in the Lab workbook
 - ◆ We will discuss as a group

Lab Exercise #5 - DISCUSSION

Wrap Up

Staging for Success

Productive Meetings

Writing Requirements

Analyzing Requirements

Overcoming Obstacles

Illustrating Business Processes

Questions You Should Always Ask

Business Requirements Template Example

Gap Analysis

Traceability and Change Control

Wrap Up

“Make sure you have finished speaking before your audience has finished listening.”

— Dorothy Sarnoff